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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

REPORT
CD NO

COUNTRY East Germany

DATE DISTR 17 January 1955

SUBJECT VEB Funkwerk Koepenick: Echolot, Ecrograph, and Fischlupe Development

NO. OF PAGES 4

PLACE ACQUIRED

NO. OF ENCLS. (LISTED BELOW)

DATE OF INFO

SUPPLEMENT TO REPORT NO

25X1

THIS IS UNEVALUATED INFORMATION

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1. TEN 3 is one of five laboratories in Department TEN in Development Area II (TE II) of Funkwerk Koepenick. TEN is headed by Willy Geissler, a member of the SED. The other four laboratories are:

   a. TEN 1, engaged in the development of amplifiers, headed by department head Geissler;

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   b. TEN 2, engaged in the development of modulation stages, headed by, Kurt Gueldenpfennig;

   c. TEN 4, engaged in electro-acoustic development, headed by Fritz Knoblenhauer;

   d. TEN 5, called the "quartz laboratory", headed by Scheil (fnu), a returnee from the USSR.

   Construction work for all five laboratories under TEN is carried out in TGK 5, a construction office headed by, Heinrich Klein.

2. TEN 3 is a laboratory for hydro-acoustic development. It is headed by Eng. Harald Fessler, who is mainly engaged in the development of magneto-striction oscillators. Following is a list of the laboratory personnel with their main fields of activity:

   a. Eng. Ernst Roessler, engaged in the development of the Fischlupe device and of the Echolot device for smallest depths;

   b. Eng. Ernst Ruffert, also engaged in Fischlupe and Echolot development;

   c. Eng. Kurt Mueller, engaged in the development of small-type Fischlupe and of Echograph devices;

   d. Eng. Alfred Kesten, mainly engaged in Echograph development;

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e. Dipl. Ing. Gotthardt Hassler, engaged in the development of magneto-striction oscillators;

f. Eng. Willi Engel, engaged in the development of the Rundecholot device. Engel came to TEW 3 and was put in charge of the Rundecholot development on 1 November 1954. He had formerly been engaged in the development of impulse devices in department T/T under the supervision of Heinz Dobesch. Prior to his transfer to TEW-3, Rundecholot development had been under the supervision of [illegible] Allred Hegler.

In addition to the above named persons there are five mechanics and laboratory technicians in TEW 3.

3. Echolot, Fischlupe and Echograph are ultasonic depth-sounding devices of the underwater radar type. The first two devices make the echo waves visible on a cathode ray tube; only the Echograph is provided with a graphic recording installation. All three devices can be only applied to vertical depths, but they differ from each other in range of operation and in the manner in which the depth-sounding is carried out. Following are the characteristics of these devices:

a. Echolot: sounding from a minimum of one meter below the instrument to a maximum of 1,200 meters in depth;

b. Echolot for smallest depths (Echolot fuer kleinste Tiefen): sounding from a minimum of 30 centimeters below the instrument to a maximum of 20 meters in depth with a locating accuracy of 20 centimeters;

c. Echograph: operates similarly to the Echolot but is equipped with a graphic recording installation;

d. Fischlupe: sounding from a minimum of ten to twenty meters below the instrument to a maximum of 1,200 meters. The difference between the Fischlupe and the Echolot devices lies in the fact that the Fischlupe carries out the sounding in depth layers, of 20 meters each, so that it can be centered on any twenty meter layer of the total depth;

e. Small type Fischlupe (Kleine Fischlupe): sounding twenty meter layers from a minimum of 20 meters below the instrument to a maximum depth of 600 to 800 meters.

4. The most important development carried out in TEW 3 is the development of the Rundecholot device (omnidirectional sounding device). This development was begun in late 1952 upon Soviet orders. It was included in the 1953 research and development plan of Professor Koepenick, continued in 1954 and it has been taken over in the 1955 plan. During 1954 a so-called "Ausfahrgeraet" model of the device was completed or almost. The "Ausfahrgeraet" is a Rundecholot device constructed in such a way that it can stay in the body of the ship when it is not in operation and can be sunk into the water underneath the ship's keel when the operation is to start. Shortly before the Soviets returned the SAG enterprises to

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the German administration at the end of 1953. Funkwerk Koepenick was requested to forward all blueprints and calculations pertaining to this "Ausfuhrgeraet" to one of the Soviet-operated scientific-technical offices in East Berlin. These blueprints and calculations were made by Engr. Pressler and technician Kesten. Upon orders of the East German Government, the Rundecholot development was continued after the termination of SAG administration. It is assumed that the Russians have been kept informed on its progress and will eventually receive the completed results of the development.

5. The Rundecholot operates not only for vertical depth sounding but for sounding in all directions within a semi-sphere located around the ultrasonic transmitter. The transmitter consists of two oscillators made from 96 percent pure nickel and 0.1 millimeter strong. These oscillators are excited with a transmitter tube developed by Guelden pfennig in TEW 2. The frequency used is 15 kcs which is near the limit of audibility. It has to be so low because the device is scheduled to operate within a radius of eight kilometers. The regular Echolots, which operate only vertically over much smaller distances, use corresponding frequencies: the Echolot mentioned above with a maximum sounding distance of 1,200 meter operates with 30 kcs frequency and the Echolot for smallest depths operates with 48 kcs as a "Frequenzlot", i.e. the echo radiation releases a new transmitter impulse when it reaches the receiver. The receiver installation of the Rundecholot consists of an oscillator system similar to the one used in the transmitter and a resonance amplifier which amplifies the arriving echo radiation. The amplified impulses are made visible on a cathode ray tube.

6. By early November 1954, only the transmitting installation and the resonance amplifier for the receiving installation of the Rundecholot were completely developed and labor tory samples were made. All other parts were developed on paper only. Even so, the problem of making the echo impulses visible had not been completely solved. TEW 3 has ten nickel oscillators obtained from supplies of the former German Kriegsmarine.